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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/682,331	08/21/2001	Guido Gentner	112740-278	6792
29177	7590	10/18/2006	EXAMINER	
BELL, BOYD & LLOYD, LLC P. O. BOX 1135 CHICAGO, IL 60690-1135			BELLO, AGUSTIN	
			ART UNIT	PAPER NUMBER
			2613	

DATE MAILED: 10/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

5/

Office Action Summary	Application No. 09/682,331	Applicant(s) GENTNER ET AL.	
	Examiner Agustin Bello	Art Unit 2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 August 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4,6-11 and 13-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4,6-11 and 13-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>8/2/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-2, 4, 6-11, 13, 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bonnedal (U.S. Patent No. 6,246,514) in view of Grubb (U.S. Patent No. 6,344,922).

Regarding claim 1, Bonnedal teaches providing at least two control units (reference numerals 21, 22 in Figure 5) which operate at different speeds to influence tilting of a spectrum of data signals in the optical data transmission path (column 3 lines 53-57); measuring a change in overall power in the optical data transmission path via at least one quicker control unit (reference numeral 23, 24, 21 in Figure 5) of the at least two control unit, the quicker control unit being connected to at least one filling light source (reference numeral 12 in Figure 5) for pumping a transmission fiber; compensating the tilting quickly (column 3 lines 53-57) by changing the power of the at least one filling light source (reference numeral 12 in Figure 5), then returning the power of the at least one filling light source slowly in the direction of the original state using at least one slower operating control unit (reference numerals 16, 27, 28, 31, 22 in Figure 5) of the at least two control units. Bonnedal differs from the claimed invention in that Bonnedal fails to specifically teach that the wavelength of the at least one filling light source lies within a transmission usable wavelength band. However, Grubb in the same field of optical

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amplifiers teaches that it is well known in the art to use wavelengths of a filling light source that lies within a transmission usable wavelength band (column 7 lines 43-55). One skilled in the art would have been motivated to use wavelengths of a filling light source that lie within a transmission usable wavelength band in order to provide gain across the entire optical fiber transmission wavelength range (column 7 lines 38-42). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to use wavelengths of a filling light source that lie within a transmission usable wavelength band.

Regarding claims 2 and 10, Bonnedal teaches incorporating a time delay (reference numerals 13, 23, 24, 21 in Figure 5) in the signal in the optical data transmission path between measurement of the overall power and injection of the at least one filling light source.

Regarding claims 4 and 15, Bonnedal teaches a power-controlled EDFA (reference numeral 11 in Figure 5), wherein the influencing of the tilting of the spectrum is at least additionally performed by the power-controlled EDFA.

Regarding claims 6 and 9, the combination of references and Grubb in particular teaches that the at least one injected full light source is injected at a start of the optical data transmission path (reference numeral 26 in Figure 5(b)).

Regarding claim 7, the combination of references and Grubb in particular teaches that the at least one injected full light source is injected at an end of the optical data transmission path and counter to a direction of transmission (reference numeral 123 in Figure 5(b)).

Regarding claim 8, Bonnedal teaches at least one multiplexer (inherent in the WDM nature of the system), arranged at a beginning of the optical data transmission path, for combining the data transmission channels, a demultiplexer (inherent in the WDM nature of the

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system), arranged at an end of the optical data transmission path, for separating the data transmission channels; and at least one path section (Figure 5) arranged between the at least one multiplexer and the demultiplexer for determining and compensating spectral tilting of transmitted data signals, the at least one path section including at least parts for measuring a change in overall power in the optical data transmission path via at least one quicker control unit (reference numeral 21 in Figure 5) of the at least two control units (reference numeral 21, 22 in Figure 5), the quicker control unit being connected to at least one filling light source (reference numeral 12 in Figure 5) for pumping a transmission fiber, and (2) parts (reference numeral 21 in Figure 5) for compensating the tilting quickly by changing a the power of the at least one filling light source, then returning the power of the at least one filling light source slowly in the direction of the original state according to a tilt compensation mechanism using at least one slower operating control unit (reference numeral 22 in Figure 5) of the at least two control units. Bonnedal differs from the claimed invention in that Bonnedal fails to specifically teach that the wavelength of the at least one filling light source lies within a transmission usable wavelength band. However, Grubb in the same field of optical amplifiers teaches that it is well known in the art to use wavelengths of a filling light source that lies within a transmission usable wavelength band (column 7 lines 43-55). One skilled in the art would have been motivated to use wavelengths of a filling light source that lie within a transmission usable wavelength band in order to provide gain across the entire optical fiber transmission wavelength range (column 7 lines 38-42). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to use wavelengths of a filling light source that lie within a transmission usable wavelength band.

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Regarding claim 11, Bonnedal teaches that the delay element is selected from the group consisting of a dispersion-compensating fiber, a fiber with low dispersion, and a fiber doped with a rare earth element (the fiber between reference numerals 13 and 23 in Figure 5).

Regarding claim 13, Bonnedal teaches that the at least one controlled full light source has a signal frequency (inherent in the single pump optical signal).

Regarding claim 16, Bonnedal teaches that the at least one path section includes at least one element (reference numeral 11 in Figure 5) which is one of a filter and an amplifier, with a respective frequency-dependent transmission characteristic and a gain characteristic, as well as downstream overall intensity meters (reference numeral 16, 27, 28, 31, 22 in Figure 5), including an evaluation unit (reference numeral 22, 29, 31, 32, 15 in Figure 5) for determining the tilting.

Regarding claims 17 and 18, Bonnedal teaches that the at least one slower control unit comprises a slow EDFA control unit (reference numeral 22 in Figure 5) connected to at least one pump source (reference numeral 12 in Figure 5) of a doped fiber.

3. Claims 3 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bonnedal in view of Grubb, as applied to claim 1 above, and further in view of Suzuki (U.S. Patent No. 6,400,497).

Regarding claims 3 and 14, the combination of Bonnedal and Grubb fails to specifically teach that the influencing of the tilting of the spectrum is additionally performed by the controllable filter. However, Suzuki in the same field of optical amplifiers, teaches that this concept is well known in the art (reference numeral 5 in Figure 1). One skilled in the art would have been motivated to include a controllable filter in order to allow gain equalization over a broader input power signal (column 2 lines 5-7 of Suzuki). Therefore, it would have been

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obvious to one skilled in the art at the time the invention was made to include a controllable filter in the device of the combination of Bonnedal and Grubb.

Response to Arguments

4. Applicant's arguments with respect the claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Agustin Bello whose telephone number is (571) 272-3026. The examiner can normally be reached on M-F 8:30-6:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571)272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


AGUSTIN BELLO
PRIMARY EXAMINER